

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 9, 14-15, 19, 26 and 32 are currently being amended.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 9-33 are now pending in this application.

In the December 16, 2008 Office Action, the Examiner rejected claims 9-33¹ under 35 U.S.C. §101 for, in the Examiner's view, being directed to non-statutory subject matter. In particular, the Examiner asserted that the pending claims did not describe statutory features and did not positively tie to another statutory class or structure.

In order to advance the prosecution of the present application, and in order to address the concerns raised by the Examiner, Applicant has amended each of the independent claims to describe that the underlying processes in the independent claims involve either encoding material into a bitstream (in claims 9 and 15) or decoding material from a bitstream (in claims 20, 26 and 32). Similar amendments have been made to the dependent claims where necessary. Support for the encoding of information into a bitstream and the decoding of information from a bitstream can be found through the present application as originally filed, as well as (inherently) in the originally-filed claims.

¹ In the office action, the Examiner erroneously noted that claims "1-33" were rejected. As claims 1-8 were previously cancelled from the application, Applicant is responding to the rejection at issue under the assumption that the Examiner intended to state that only claims "9-33" were rejected. Additionally, Applicant respectfully disputes the Examiner's characterization of the claims as being limited to only "providing, encoding and performing." As would be recognized by one of ordinary skill in the art, a number of the pending claims describe processes that fall outside the realm of "providing, encoding and performing," and not all of these processes are included in every pending claim.

According to the current “machine-or-transformation” test currently used to determine patent eligibility under 35 U.S.C. §101, a process claim meets the statutory guidelines for patent-eligible subject matter if it (1) is implemented with a particular machine, that is, one specifically devised and adapted to carry out the process in a way that is not concededly conventional and is not trivial; or (2) transforms an article from one thing or state to another. The pending claims, as amended, clearly meet the second prong of this test. In particular, a physical transformation occurs when information is encoded into a bitstream, as the information was not within the same “state” before transformation. A similar transformation occurs in the decoding of information from a bitstream, albeit in the reverse manner. By explicitly describing the encoding of information into a bitstream and the decoding of information from a bitstream, the pending claims meet the statutory guidelines set forth by the machine-or-transformation test. For this reason, Applicant submits that the amendments provided in the present communication are more than sufficient to overcome the Examiner’s rejections under 35 U.S.C. §101.

The Examiner rejected claims 15 and 17-18 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,680,483 (Tranchard), with the Examiner asserting that Tranchard teaches all of the features of these claims. For the following reasons, Applicant traverses this set of rejections.

Independent claim 15 of the present application describes a method of encoding a video sequence. According to claim 15, a first indication is provided in an encoded bitstream. This first indication indicates whether or not at least a part of at least one picture is encoded with reference to a picture preceding the intra coded picture in encoding order, with the at least one picture having an encoding order succeeding the intra coded picture. In other words, this first indication will indicate whether any of the pictures that are encoded after the intra-coded picture rely upon a picture that precedes the intra-coded picture (in encoding order).

Applicant respectfully submits that such an indication is neither taught nor suggested by Tranchard. In rejecting claim 15, the Examiner asserted that the indication of a “P” picture discussed at column 8, lines 1-32 of Tranchard (and more particularly column 8, lines 9-12) indicated whether or not at least part of the corresponding picture is encoded with reference to

a picture preceding the intra-coded picture in encoding order. This is not correct. As discussed in Applicant's September 29, 2008 Amendment and Reply, although P pictures in Tranchard are not intra-coded pictures, the associated indication does not satisfy the requirements of claim 15. To understand this point, the Examiner is again respectfully directed to column 8, lines 8-14 of Tranchard, which states:

The pictures P ("Predictive coded pictures") constitute a second type of pictures which are predicted by unidirectional motion compensation based on a preceding (or possibly subsequent) picture (of the type I or of the type P itself) and which can thus only contain macroblocks of the type P or of the type I.

Applicant does not dispute that the above text discusses how P pictures may be predicted in part based upon an earlier P picture or I picture. However, the indication of claim 15 of the present application is more specific than simply defining whether a picture is a P picture or an I picture. Rather, the indication described in claim 15 must indicate whether the picture is at least partially encoded with reference to a picture preceding an intra-coded picture in encoding order. The fact that a picture is a P picture does not accomplish this task. Instead, the indication that a picture is a P picture only identifies the earlier or later picture upon which the picture relies, without any indication whatsoever of whether the relied-upon picture is before or after a particular intra-coded picture. As a result, when a processing device receives an indication of a P picture in Tranchard, it obtains no information from the indication whether a picture relied upon by P is before or after a preceding intra-coded picture in encoding order; in fact, the indication provides no positional reference for the relied-upon picture at all relative to a previous intra-coded picture. Therefore, the indication of the picture-type alone cannot satisfy the requirements of the indication in independent claim 15.

Additionally, Applicant also notes that, even if the indication in Tranchard was referring to an I picture, this indication would still not satisfy the requirements of claim 15. As discussed above, claim 15 requires that the indication indicate whether or not at least a part of at least one picture is encoded with reference to a picture preceding the intra coded picture in encoding order, with the at least one picture having an encoding order succeeding the intra coded picture. Importantly, however, claim 15 also requires that the at least one picture be different than the intra-coded picture (since it must be later than the intra-coded

picture in encoding order). However, the indication of the I picture in Tranchard refers only to the intra-coded picture itself and no others. Since no other picture is referenced in this indication, it is impossible for the indication to reference a location-based relationship between two pictures.

Because Tranchard fails to teach the use of an indication of whether or not at least a part of at least one picture is encoded with reference to a picture preceding the intra coded picture in encoding order, with the at least one picture having an encoding order succeeding the intra coded picture, Applicant submits that independent claim 15 cannot be anticipated by Tranchard. Additionally, because claims 17-18 are dependent upon claim 15, Applicant submits that these claims are allowable for at least the same reasons.

The Examiner also asserted that claims 16 and 19 were rejected under 35 U.S.C. §103(a) as being obvious over Tranchard in view of U.S. Publication No. 2003/0156640 (Sullivan). However, as both of these claims are directly dependent upon claim 15, Applicant submits that claims 16 and 19 are allowable for at least the reasons discussed above, since Tranchard fails to teach or suggest all of the features of claim 15 and since the Examiner has failed to allege that Sullivan is capable of curing the above-described deficiencies of Tranchard.

The Examiner rejected claims 20, 26 and 32 under 35 U.S.C. §102(e) as being anticipated by what the Examiner characterized as “admitted prior art.” For the following reasons, Applicant traverses these rejections.

In rejecting the above claims, the Examiner relied upon Figures 1 and 2 of Applicant’s application, as well as the presence of various I, B, and P pictures in these figures. However, none of these types of frames include the precise indication that is required by the independent claims at issue, namely an indication as to whether all coded pictures at and subsequent to an intra-coded picture and display order can be correctly decoded when a decoding process is started from the intra-coded picture.

As one of ordinary skill in the art would readily understand, a conventional I picture refers to an intra-coded picture, where the picture can be correctly decoded without reference

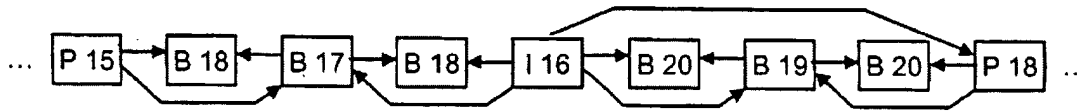
to any other picture or frame. Therefore, when a decoder receives an indication of an I picture, it only understands that the picture can be correctly decoded, regardless of whether or not prior pictures in decoding order have already been received.

In the case of a P picture, this type of picture is decoded with reference to either a preceding or a subsequent picture in decoding order. In other words, a P picture can only be correctly decoded if the picture with which it references is also received by the decoding device. As such, a conventional P picture will include an indication that one other picture is needed for correct decoding of the P picture.

Lastly, in the case of a B picture, such a picture is dependent upon the correct decoding of two other pictures—one picture preceding the B picture and one picture subsequent to it. Again, any conventional indication associated with such a B picture will simply identify the other pictures or frames upon which the B picture relies for successful decoding.

Contrary to the Examiner's assertions, however, none of the conventional I, B or P pictures depicted in Figures 1 and 2 of the present application include any indication of the type described in independent claims 20, 26 and 32. In particular, these types of pictures only include an indication of the picture(s) upon which the picture relies for successful decoding. There is absolutely no indication in any of these pictures as to whether or not all coded pictures at or subsequent to an intra-coded picture in display order can be correctly decoded when a decoding process is started from the intra-coded picture. In other words, conventional I, B and P frames include no information as to whether all subsequent pictures (in display order) after a particular intra-coded picture can be correctly decoded if the intra-coded picture is the first picture to be decoded.

To further understand the difference between independent claims 9, 20, 26 and 32 and the "I," "B" and "P" pictures in Figures 1 and 2 of the present application, Applicant has reproduced Figure 2 below.



In rejecting the claims, the Examiner asserted that B20, B19 and B20 met the “indication” requirement of the claims at issue in the set of rejections. However, in a conventional decoding process, such as that described in the background of the present application, these pictures include no indication as to whether a decoding process can or cannot be correctly conducted when starting at I16. In the case of the first picture B20, when a decoding device receives this picture, the only indication provided to the decoding device is that B20 relies upon information contained in I16 and B19 for successful decoding. There is no information provided concerning whether subsequent pictures, e.g., B19, the next B20 and the next P18, can be correctly decoded if I16 is the first picture to be decoded. Similarly, B19 only includes an indication that it relies upon the two pictures identified as B20, while the second B20 indicates that it relies upon B19 and P18. In each of these instances, there is no information included as to whether or not I16 can be a useful starting point for decoding without resulting in some sort of error in later pictures.

Referring again to Figure 2 above, it is helpful to consider the potential situation where, for example, the first picture B20, rather than relying upon I16, relied upon P15. Because the decoder would have to have previously decoded P15 before B20 could be successfully decoded, I16 would not be a preferable starting point for decoding, since the decoder would not have all of the information necessary to correctly decode the first picture B20. However, the conventional bit streams depicted in Figures 1 and 2 of the present application include absolutely no indication as to whether fully successful decoding can begin from I16 or not. In other words, the B and P pictures relied upon by the Examiner only indicate the frames upon which the respective B and P pictures rely upon for successful decoding thereof; they contain no information about whether successful decoding can properly start from a particular intra-coded picture. As discussed in Applicant’s previous September 29, 2008 Amendment and Reply, if one attempts to start decoding from an intra-coded picture where subsequent frames in display order rely upon frames preceding the intra-

coded frame in decoding order, decoding errors can occur in the later-displayed B and P frames. The indication described in independent claims 20, 26 and 32 addresses this issue by specifically informing the decoder whether or not particular intra-coded pictures can be used as proper random access points without risking these types of errors. Figures 1 and 2 and the associated text in the Background the present application do not provide for any such teaching.

In summary, although Figures 1 and 2 of the present application refer to B and P pictures, any conventional indication associated with these pictures only indicates the frames upon which they rely for successful decoding. They do not provide any information about whether successful decoding can begin from a particular intra-coded picture. As such, Figures 1 and 2 of the present application and their associated text cannot anticipate independent claims 20, 26 and 32 and their respective dependent claims.

For the above reasons, Applicant submits that the material relied upon by the Examiner as “admitted prior art” fails to disclose all of the features of claims 20, 26 and 32, and these claims are therefore allowable over the relied-upon material.

Lastly, the Examiner rejected claims 9-14, 16, 19, 21-25, 27-31 and 33 under 35 U.S.C. §103(a) based upon the same material characterized by the Examiner as “admitted prior art” as discussed above in view of at least one of Tranchard and Sullivan. However, and as discussed above, the material characterized by the Examiner fails to teach or suggest a first indication indicating whether or not all coded pictures at and subsequent to an intra-coded picture in display order can be correctly decoded when a decoding process is started from the intra-coded picture, and this feature is included in each of claims identified above as being rejected under 35 U.S.C. §103(a). Additionally, because Tranchard cannot cure the deficiency identified above, and because the Examiner has not even alleged that Sullivan can cure this deficiency, Applicant submits that these claims are also allowable over the prior art of record.

For the above reasons, Applicant submits that claims 9-33 are all allowable over the art of record.

Applicant believes that the present application is now in condition for allowance.
Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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